

**Bonneville Power Administration**  
**Fish and Wildlife Program FY99 Proposal Form**

**Section 1. General administrative information**

**Conduct Satellite Facility O&M and Program  
M&E for Grande Ronde Spring Chinook Salmon**

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**Bonneville project number, if an ongoing project** 9800703

**Business name of agency, institution or organization requesting funding**  
Confederated Tribes of the Umatilla Indian Reservation

**Business acronym (if appropriate)** CTUIR

**Proposal contact person or principal investigator:**

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**Subcontractors.** List one subcontractor per row; to add more rows, press Alt-Insert from within this table

Organization	Mailing Address	City, ST Zip	Contact Name
NA			

**NPPC Program Measure Number(s) which this project addresses.**  
6.2 Production, 6.26.2 Other Production Measures, 7.4.L Production Facilities

**NMFS Biological Opinion Number(s) which this project addresses.**

The biological opinion for Hatchery Actions (page 67, Section 10.B.3 and 4) states  
“USFWS should terminate use of Rapid River stock at Lookingglass Hatchery no later

than 1996” and “The USFWS should consider development of indigenous broodstock ...”  
ESA Captive Brood Permit 1,011

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### Other planning document references.

If the project type is “Watershed” (see Section 2), reference any demonstrable support from affected agencies, tribes, local watershed groups, and public and/or private landowners, and cite available documentation.

Conventional and captive broodstock programs for Snake River spring/summer chinook salmon are supported by Snake River Recovery Team recommendations (SRSR, 1994), NMFS (1995a) draft recovery plan, Wy-Kan-Ush-Me Wa-Kush-Wit Plan (Volume II), Grande Ronde Subbasin Plan, Northeast Oregon Hatchery (NEOH) Final Siting report, NEOH Conceptual Design Report

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### Subbasin.

Grande Ronde River

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### Short description.

Develop, implement and evaluate integrated conventional and captive brood hatchery projects to prevent extinction and provide opportunity for recovery and mitigation for endangered spring chinook salmon populations in Catherine Creek and the upper Grande Ronde and Lostine rivers.

## Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish	+	Construction		Watershed
	Resident fish	X	O & M	+	Biodiversity/genetics
	Wildlife	+	Production	+	Population dynamics
	Oceans/estuaries	+	Research	+	Ecosystems
	Climate	+	Monitoring/Eva.		Flow/survival
	Other	+	Resource mgmt		Fish disease
			Planning/admin.	X	Supplementation
			Enforcement		Wildlife habitat en-
			Acquisitions		hancement/restoration

### Other keywords.

captive brood, endangered species, spring chinook salmon, recovery, mitigation, life history, ecological interactions, NATURES rearing, environmental monitoring.

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### Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
8909600	Genetic Monitoring and Evaluation of Snake River Salmon and Steelhead	This project will be monitoring genetics of populations in the targeted tributaries.
9202604	Early Life History of Spring Chinook Salmon in the Grande Ronde Basin	This project's life history and trapping data will be used to evaluate the success of the (Grande Ronde Endemic Spring Chinook Salmon Program) GRESCSP.
9403300	Fish passage center's smolt monitoring program	GRESCSP-produced juvenile hatchery and natural salmon will provide release and migration data for in-river information on migration timing and survival.
9405400	Bull Trout Studies in Central and Northeast Oregon	The GRESCSP collects bull trout for tagging, demographic and recapture data.
9604400	Grande Ronde Basin Spring Chinook Captive Broodstock Program	This is capital construction associated with implementing 9801001.
9801001	Grande Ronde Captive Broodstock O&M/M&E/Fish Health	<p>GRESCSP adult trapping facilities will be operated to collect adult salmon for the conventional component of the Program and evaluate the success of both the conventional and captive brood components of the Program.</p> <p>The GRESCSP juvenile acclimation facilities will be operated to acclimate salmon at "in-place" tributaries from both convention and captive brood components of the Program.</p>
9800701	GRESCSP construction	Construction for Juvenile acclimation and adult trapping facilities for the GRESCSP.

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9800702	Grande Ronde River O&M/M&E NPT	Operation & Maintenance and Monitoring & Evaluation for GRES CSP for the Nez Perce Tribe
9800704	Grande Ronde River O&M/M&E ODFW	Operation & Maintenance and Monitoring & Evaluation for ODFW: includes transportation, hatchery operation, etc.

## Section 4. Objectives, tasks and schedules

### *Objectives and tasks*

Obj 1,2, 3	Objective	Task a,b,c	Task
1	Prepare juvenile acclimation facility for operation in 2000	a	Operate all systems and purchase non-capital items for operation of the juvenile acclimation facility in preparation for full operation in spring 2000
2	Operate adult trapping facilities on the upper Grande Ronde and Catherine Creek	a	Install weir, assemble trapping facilities and setup living quarters on or about May 15 (or as otherwise directed according to Annual Operating Plan)
		b	Provide on-site security and liaison with the public
		c	Maintain weir and trapping facilities in good working order
		d	Process all adult salmon captured in the trap and prepare fish for transport
		e	Coordinate communication with ODFW for transport of brood stock to Lookingglass Hatchery
		f	Assist ODFW with transport to Lookingglass Hatchery
		g	Provide data summaries to ODFW

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			in fulfillment of ESA permitting requirements
3	Review permitting requirements for ongoing construction	a	Review documents and meet with agency personnel to review any outstanding permitting requirements (NEPA/ESA)
		b	Oversee any additional “finish work” construction
4	Plan and implement comprehensive multiyear operations	a	Meet with comanagers to review the conventional and captive brood components
		b	Provide input during monthly captive brood Technical Oversight Team meetings
		c	Attend and provide input at the Annual Operations Plan meeting
		d	Cooperate in implementing the comprehensive multiyear operations plan
5	Evaluate artificial production program for chinook salmon in the Grande Ronde River basin	a	Meet with comanagers to review objectives of M&E plan as outlined in the captive brood proposal
		b	Implement cooperative evaluation plan for CTUIR with NPT and ODFW
		c	Collect baseline temperature and flow data at adult trapping and juvenile acclimation sites
		d	Integrate additional evaluations of traditional supplementation as determined by comanagers
6	Collect Monitoring and Evaluation data during operation of the adult capture facility	a	Collect fork length (FL), and mark information in every adult salmon collected at the facility
		b	Uniquely mark and tag all adult salmon that are released above the weir
		c	Complete stream surveys on the upper Grande Ronde and Catherine Creek below weirs

7	Cooperate in additional ongoing Monitoring and Evaluation of conventional and captive portions of the Program	a	Assist ODFW in ongoing M &E at Lookingglass and Bonneville Hatcheries and Manchester Marine Laboratory
		b	Conduct additional non-index spawning ground surveys in the upper Grande Ronde River and Catherine Creek
		c	Implement additional evaluation activities that were cooperatively developed in 1998
		d	Cooperate in development and implementation of data sharing for the Program
8	Cooperate in data collection for bull trout captured at adult weirs in accord with the ongoing bull trout study in northeast Oregon	a	Meet with bull trout study personnel to determine reasonable data collection needs to incorporate into the Annual Operations Plan for adult facilities
		b	Collect data, scales, genetics samples, etc., as requested
		c	Provide data at the end of field operations
9	Cooperate in data collection for summer steelhead in the Grande Ronde River basin	a	Meet with comanagers to determine data that need to be collected in preparation for studies that are critical in response to ESA listing of summer steelhead in the Grande Ronde River basin
		b	Collect data, scales, genetics samples, etc., as necessary
		c	Coordinate and develop integrated management plan for summer steelhead in the Grande Ronde River as it relates to facility operations and Program evaluation
10	Technology Transfer	a	Write quarterly reports
		b	Compile, summarize and analyze monitoring and evaluation data in an Annual Report.
		c	Present findings at BPA and other professional meetings as required.

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**Objective schedules and costs**

<b>Objective #</b>	<b>Start Date mm/yyyy</b>	<b>End Date mm/yyyy</b>	<b>Cost %</b>
1	8/1999	12/1999	3
2	5/1999	10/1999	3
3	1/1999	12/1999	55
4	1/1999	12/1999	5
5	1/1999	12/1999	10
6	5/1999	10/1999	5
7	5/1999	12/1999	5
8	1/1999	12/1999	2
9	1/1999	12/1999	2
10	1/1999	12/1999	10

**Schedule constraints.**

Operation of facilities is dependent upon adults being available and juvenile being available to acclimate. Preparation for acclimation will not occur until 1999 and acclimation is not expected to occur until the spring of 2000.

Construction of adequate incubation, trough and rearing facilities for both conventional and captive brood components of the Grande Ronde Endemic Chinook Salmon Supplementation Program.

Construction of adult trapping and juvenile acclimation facilities in the upper Grande Ronde and Catherine Creek.

Construction of adequate rearing space to adulthood for the captive brood component of the Program at Bonneville Hatchery and Manchester Marine Laboratory.

Success of conventional and captive brood components of the Program in producing juveniles and adult salmon.

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**Completion date.**

This project is expected to continue until artificial propagation is not required for spring chinook salmon in the Grande Ronde River basin. Funding may be shifted to LSRCF when the program moves from recovery to mitigation.

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**Section 5. Budget**

***FY99 budget by line item***

<b>Item</b>	<b>Note</b>	<b>FY99</b>
Personnel		\$109,923
Fringe benefits		\$30,778
Supplies, materials, non-expendable property		\$39,200
Operations & maintenance		\$23,440
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	2 PIT tag stations	\$24,000
PIT tags	# of tags:	\$0
Travel		\$28,756
Indirect costs	34%	\$78,913
Subcontracts		\$0
Other		\$0
<b>TOTAL</b>		<b>\$335,010</b>

***Outyear costs***

<b>Outyear costs</b>	<b>FY2000</b>	<b>FY01</b>	<b>FY02</b>	<b>FY03</b>
Total budget	\$494,000	\$521,000	\$550,000	\$584,000
O&M as % of total	20.3%	20.3%	20.3%	20.3%

**Section 6. Abstract**

Runs of chinook salmon to the Grande Ronde River basin that were once in excess of 10,000 as late as the 1950's (USACOE 1975) have declined precipitously.

The **goals** of the Grande Ronde River Endemic Spring Chinook Salmon Program (Program) (under 7.4.L.1 of the 1994 Columbia Basin Fish and Wildlife Program) are to prevent extinction and restore spring chinook salmon runs in Catherine Creek and the upper Grande Ronde and Lostine rivers. Through a diversified approach with both conventional and captive brood, it is our desire to return adults to natural spawning and rearing areas with the objectives of increasing natural production, fulfilling brood stock needs and eventually restoring harvest opportunities. CTUIR will operate satellite facilities in the upper Grande Ronde River and Catherine Creek and evaluate the success of restoration and mitigation efforts.

The Program has two components. The captive brood component seeks to increase the number of adult salmon returning to the basin to decrease demographic probability of extinction. The conventional component of the Program has a higher demographic risk, but provides a smaller genetic risk (due to a shorter part of the life cycle with artificial selection). When anticipated increases in population size are realized, the conventional



component is expected to provide a majority of this production. The first meaningful contribution to production (increased females returning) from the Program is expected to be observed in 2002.

Results will be monitored by comanagers with a coordinated evaluation plan which is currently under development.

## **Section 7. Project description**

### **a. Technical and/or scientific background.**

Present escapement levels and recent trends indicate that Grande Ronde basin spring chinook are in imminent danger of extinction. Conventional and captive broodstock components for Snake River spring/summer chinook salmon are supported by recommendations in the Snake River Recovery Team's report (Snake River Salmon Recovery Team Report 1994), NMFS draft recovery plan, and the Northwest Power Planning Council's Fish and Wildlife Program (Northwest Power Planning Council 1994). The NMFS draft recovery plan states "captive broodstock and supplementation programs should be initiated and/or continued for populations identified as being at imminent risk of extinction, facing severe inbreeding depression, or facing demographic risks" and further states "considering the critical low abundance of Grande Ronde spring/summer chinook salmon, impacts to listed fish should be avoided and Lookingglass Hatchery should be operated to prevent extinction of local populations. Consequently indigenous broodstock should be immediately transferred to Lookingglass Hatchery (natural fish collected in 1995), and production should be maximized to supplement natural populations."

Our goals are to prevent extinction and preserve the genetic integrity of the three target populations, to increase the likelihood that recovery and eventually mitigation may occur.

### **b. Proposal objectives.**

1. Prepare juvenile acclimation facility for operation in 2000 to acclimate up to 200,000 spring chinook salmon in each Catherine Creek and the upper Grande Ronde River.
2. Operate adult trapping facilities on the upper Grande Ronde and Catherine Creek to collect broodstock.
3. Review permitting requirements for ongoing construction to address various issues that may arise due to unfinished construction.
4. Plan and implement comprehensive multiyear operations for integration of conventional and captive components of the Program.
5. Evaluate artificial production Program for chinook salmon in the Grande Ronde River basin to determine success of restoring natural chinook salmon populations.

6. Collect Monitoring and Evaluation data during operation of the adult trapping facility to document population information and evaluate Program success.
7. Cooperate in additional ongoing Monitoring and Evaluation of conventional and captive components of the Program to assure an integrated approach with other related evaluation projects for the Grande Ronde River basin.
8. Cooperate in data collection for bull trout captured at adult trapping sites to provide information for the ongoing bull trout study in northeast Oregon.
9. Cooperate in data collection for summer steelhead in the Grande Ronde River basin to provide information necessary to develop an integrated steelhead recovery program for the Grande Ronde River basin
10. Transfer technology in a timely manner so that data are available to managers so they can make informed adaptive management decisions.

**c. Rationale and significance to Regional Programs.**

This project is an integral part of the Grande Ronde Endemic Spring Chinook Salmon Program. The GRESCSP is one of the first programs being developed to take an integrated approach to preventing extinction of an anadromous salmonid species in the Columbia River basin. The use of captive brood is designed to reduce the probability of extinction, but has genetic risks that are greater than the conventional approach. A sliding scale adjusts the proportion of the artificial production from this source, depending upon the most imminent risk, demographic (extinction) or artificial selection (genetic). The proportion of the production from captive brood decreases (and that of conventional increases) as the number of adults returning increases and the demographic risk of extinction decreases.

The results of using hatchery fish to increase natural production has resulted in a mixture of failures and successes. The intensive research and monitoring that will accompany this Program is expected to increase our understanding of potential mechanism that result in success or failure in use of hatchery fish for this purpose.

The captive brood project is on the cutting edge of fish culture. Three rearing techniques are being evaluated to produce adult salmon at fresh and salt water facilities.

**d. Project history**

Project numbers

Planing under projects 8805302 has resulted in construction under 9800701. In 1997 temporary adult collection facilities were installed and operated under 8805302. Temporary facilities will also be operated in 1998 as well. Because we have moved into construction, a new project number has been assigned for CTUIR operation of adult trapping and juvenile acclimation facilities and Program evaluation.

Project Reports

## NEOH Master Plan

## NEOH Final Siting Design

### Summary of major achievements for the Project

#### *Initiation of a conventional program*

Temporary adult traps were in place last year. Late installation and smaller than expected adult returns resulted in a release of all captured adult salmon to the habitat in 1997.

#### *Construction*

Temporary trapping facilities were constructed and operated on the Grande Ronde River and Catherine Creek in 1997. Past planning efforts are expected to result in construction of juvenile acclimation and adult trapping facilities being complete in 1998/99.

### Summary of major achievements for the Program

#### *Initiation of captive brood*

Captive brood have been collected starting with the 1994 brood. Higher than expected survival rates to date suggest that growing endemic salmon in captivity to adult size is achievable. Numerous additional challenges (disease transmission, asynchronous maturation and spawning, etc.) will need to be overcome for the program to be successful.

The captive component is expected to provide a significant contribution to the Program in 1998, with expected spawning of 4-year-old female salmon.

### Adaptive management implications

Catherine Creek, Grande Ronde, and Lostine rivers were historically three of the most productive populations in the Grande Ronde basin and suffered significant declines to alarming low levels in 1994 and 1995. This emergency requires dramatic and unprecedented efforts prevent extinction.

The initial management plan under the LSRCP program called for hatchery supplementation of four chinook populations in the basin: Catherine Creek, and Wallowa, Grande Ronde, and Lostine rivers. A switch to endemic programs in the Grande Ronde River was required due to: increased emphasis on endemic stock recovery; consultations and requirements resulting from listing of Grande Ronde chinook salmon populations as endangered; our lack of success in using non-local hatchery stocks for supplementing Grande Ronde chinook populations; and preferred strategies for use of artificial propagation identified in the NMFS draft recovery plan.

Program results are uncertain, however we believe that this Program will provide substantial new knowledge for the use of artificial propagation to enhance natural production in the Columbia River basin.

### Years underway

Under 8805302: Planning - 1993 to 1997. Facility design - 1997/98. Construction and operation of temporary adult collection sites in 1997.

Under 9800703 - Operation of temporary adult collection facilities - 1998, Construction of permanent facilities in 1998/99.

#### Past Costs

8805302

Year	1993	1994	1995	1996	1997	1998
Amount	98,000	7,000	0	145,000	306,579	175,000

Note: amounts reflected in 1996 and 1997 include other northeast Oregon streams, not just the Grande Ronde River basin.

Significant increase in costs in 2000 is associated with operation of the acclimation facilities.

#### **e. Methods.**

1. Prepare juvenile acclimation facility for operation in 2000.

Although full operation of the acclimation facilities will not occur until the spring of 2000, it must be operated briefly and winterized so that it will be ready to receive juvenile salmon in the spring.

2. Operate adult trapping facilities on the upper Grande Ronde and Catherine Creek.

We will be trapping adult salmon returning to Catherine Creek and the upper Grande Ronde River to collect data from fish returning to each tributary. Trapping may result in retention of a portion of the adults for the conventional component of the Program, should target number that will be returning be appropriate. Retention guidelines are being developed by comanagers and will be approved as part of the multiyear plan that will be submitted to NMFS.

Because these fish are endangered species, we will be anaesthetizing fish one at a time. Fish will be marked for identification at the hatchery (if they are retained for broodstock) or upon recovery on the spawning grounds. If holding conditions are poor, fish will be transported from trapping facilities frequently, and early in the morning if necessary.

3. Review permitting requirements for ongoing construction.

Construction for all facilities is expected to be completed in 1998. However, additional minor “finish up” construction is expected to be necessary. We will oversee any additional construction and review permitting requirements if needed.

4. Plan and implement comprehensive multiyear operations

CTUIR, ODFW and NPT are in the process of developing multiyear operations plan for the GRESCSP. This plan will integrate conventional and captive brood components of the Program and will address the full hatchery operation from collection of adult (ripeness checks for captive fish) through release of progeny two years later, to eventual disposition of adults that return to tributaries.

5. Evaluate artificial production program for chinook salmon in the Grande Ronde River basin.

CTUIR, ODFW and NPT are in the process of developing multiyear evaluation plans to determine the success of the Program. Much of the evaluation will be similar to, and extensions of those which were detailed for the captive brood component. CTUIR will assist in evaluation of the hatchery component of the program, but is expected to be more involved with performance of the salmon in the natural environment.

6. Collect Monitoring and Evaluation data during operation of the adult trapping facility

Monitoring and evaluation data will be collected at the adult trapping facilities, compiled and analyzed for all adult salmon that are trapped. In 1999 we will collect data from natural fish. Operation during later years will entail documentation of hatchery fish returns.

7. Cooperate in additional ongoing Monitoring and Evaluation of conventional and captive portions of the Program

In 1999 and later years, we will integrate our data collection with a cooperative evaluation of returns of progeny of conventional and captive components of the program and their subsequent contribution to natural production. Hypotheses are expected to evaluate the success of the Program (e.g., evaluation of juvenile growth, juvenile migration performance, juvenile-to-adult survival), and determine whether the populations are continuing to decline. Some tasks will be extensions of ongoing projects, while others will require new or intensified efforts on the part of comanagers.

8. Cooperate in data collection for bull trout captured at adult weirs in accord with the ongoing bull trout study in northeast Oregon

Because some bull trout migrate long distances, trapping information from as many trapping sites as possible are required to provide a comprehensive picture of bull trout growth, life history, etc. CTUIR cooperates with this project at all trapping facilities in the Umatilla and Grande Ronde rivers.

9. Cooperate in data collection for summer steelhead in the Grande Ronde River basin

A comprehensive steelhead management plan will be developed to assess the status and recovery program for Snake River steelhead. This will likely result in development of endemic programs in the Grande Ronde River basin. Under this project, CTUIR will cooperate in the planning, development and implementation of resulting projects as they relate to ongoing activities for the GRESCSP.

#### 10. Technology Transfer

Results will be presented in Quarterly and annual reports and at BPA or other professional forums.

#### Results Expected:

Increased natural production with more:

- juvenile salmon migrating from the basin, adults returning to the basin, redds in spawning areas, decreasing the demographic risk of extinction.

Minimal changes in life history characters (an indicator of genetic change).

Progeny returning per parent for the conventional component of the Program that exceed those we would have expected had we let the fish spawn naturally.

With halt of declining population and rebuilding efforts, we expect progress toward delisting and then mitigation as was the original intent of the Lower Snake River Compensation Plan.

Fulfillment of tribal trust responsibilities with fisheries re-established in usual and accustomed fishing areas.

#### **f. Facilities and equipment.**

Facilities (not yet built) that will be operated under this project are one adult trapping facility and one juvenile acclimation facility at each tributary: Catherine Creek and the upper Grande Ronde River. Each adult facility should have a holding capacity of 75 adult salmon. Each acclimation facility is expected to be able to acclimate 10,000 pounds of fish. We will purchase a large portion of the standard non-capital items for operation and maintenance of the adult and juvenile facilities in 1999 (snow blower, water pump, pressure washer, DO meter, etc.) .

For 1999, office space, utilities, etc. for 1.5 biologists in La Grande will be required. A materials storage area/shop area will be required to store equipment and a storage area will be required for the two trailers when the facility is not in use. Three vehicles will be required for the project, one for the project biologist and one on site for each of the facilities. One slip-in portable tank (for a pickup truck) will be used to move fish when small numbers do not require the use of a large transport vehicle. A flatbed truck and holding tank will be required to move large numbers of adult fish or fish from different trapping facilities (with more than one compartment) to Lookingglass Hatchery.

Large equipment and personnel needed for facility access/maintenance (e.g., large-scale snow removal) will be contracted out.

Completed facilities under other projects upon which this project is dependent are:

Bonneville Hatchery (where captive brood adults rearing in fresh water are being held and will be spawned),

Manchester Marine Laboratory (where captive brood adults rearing in salt water are being held),

Irrigon Hatchery, where some incubation and early rearing of conventional and captive brood eggs, fry and parr may be reared,

Lookingglass Hatchery, where captive brood are reared to smolting (before being transferred to Bonneville Hatchery or Manchester Marine Laboratory) and where progeny of conventional and captive brood components of the program are expected to rear before acclimation.

With LIMITED incubation, and rearing space at existing facilities, ADDITIONAL FACILITIES will be needed when the Program is at full capacity.

All other requirements of this proposal should be readily available from standard sources.

The only capital equipment costs under this contract in 1999 are the purchase of 2 PIT tag stations (@\$12,000 ea) which will be stationed at juvenile facilities in 2000.

#### **g. References.**

NMFS (National Marine Fisheries Service). 1995a. Proposed recovery plan for Snake River salmon. U. S. Department of Commerce, National Oceanic and Atmospheric Administration, Portland, Oregon.

NMFS (National Marine Fisheries Service). 1995b. Biological opinion for 1995 to 1998 hatchery operations in the Columbia River basin. Section 7 Consultations. U. S. Department of Commerce, National Oceanic and Atmospheric Administration, Silver Spring, Maryland.

NPPC (Northwest Power Planning Council). 1994. 1994 Columbia River Basin Fish and Wildlife Program. Northwest Power Planning Council, Portland, Oregon.

SRSRT (Snake River Salmon Recovery Team). 1994. Final recommendations to the National Marine Fisheries Service, Portland, Oregon.

USACOE (U. S. Army Corps of Engineers). 1975. Lower Snake River Fish and Wildlife Compensation Plan. U. S. Army Corps of Engineers, Special Report, Walla Walla, Washington.

## **Section 8. Relationships to other projects**

The Grande Ronde Endemic Spring Chinook Salmon Program (GRESOSP) is fully

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integrated with other artificial and natural production and research programs within the Grande Ronde basin and the Columbia River region. Information being collected by our project has been and continues to be utilized by other projects. The captive broodstock component of the program shares data with captive programs in the upper Snake River basin and around the Pacific Northwest. Evaluation of the “on the ground success” of the GRESCSP is dependent upon the highly controversial and equivocal success of using hatchery fish to prevent extinction, increase natural production and (eventually) mitigate for losses due to hydroelectric dam construction and operation. Results will be crucial for evaluating the potential use of hatchery fish to prevent extinction in other areas and with other species (e.g., recently listed summer steelhead stocks in the Snake river basin).

1) Bonneville Hatchery Operations - (NMFS funding): One of the captive broodstock production facility is expected to be completed at Bonneville Hatchery in May 1998. Management personnel at Bonneville will be overseeing the production program. We will be sharing equipment and personnel with Bonneville Hatchery. All opportunities to maximize efficiency will be sought.

2) LSRCP Hatchery Operations and Evaluations: As part of the Grande Ronde River Endemic Spring Chinook Salmon Program, this BPA project is completely integrated with the LSRCP Program. LSRCP facilities and personnel from all three managers in Oregon (CTUIR, ODFW and NPT) are cooperating in implementing the production, evaluations, and fish health monitoring for the Program. Extensive sharing of data and expertise is occurring between LSRCP and the Program. Cooperative research under LSRCP will be providing information to assist in assessment of the success of the Program.

3) The Northwest Power Planning Council's Fish and Wildlife Program (NPPC 1994) calls for initiation of conventional and captive broodstocks and required evaluations.

4) Habitat enhancement projects in the Grande Ronde River (8402500 Grande Ronde River Fish Enhancement - ODFW; 9608300 Grande Ronde Subbasin Watershed Restoration -CTUIR) are expected to improve habitat, resulting in an increased probability of success of the Program.

5) Planning and implementation of the Lostine River portion of the integrated Grande Ronde Endemic Spring Chinook Salmon Program is being addressed under several BPA-funded projects: 5520600 - Cryopreservation of Salmon Gametes, 5520700 - Captive Broodstock Artificial Propagation, 9403900 - Wallowa Basin Project Planning, 9702500 - Wallowa County/Nez Perce Salmon Habitat Recovery, 9800702 - Grande Ronde River Supplementation: Operations and Maintenance/Monitoring and Evaluation for the Lostine River.

6) PATH: Plan for analyzing and testing hypotheses. Naturally-produced juveniles resulting from the GRESCSP will provide data for life cycle model - 9600800 .

7) Northeast Oregon Hatcheries Master Plan - NPT/CTUIR/ODFW. 880530/ 8805302/ 8805305: NEOH planning that has resulted in construction /O&M and M&E for the GRESCSP.



8) Grande Ronde Model Watershed Investigation of juveniles produced by the GRESCSP will provide information on habitat utilization and juvenile production, 9402700.

## **Section 9. Key personnel**

### **Peter T. Lofy, Project Leader, 0.5 FTE**

#### Education

B.S., Biology Loyola Marymount University, 1980

M.S., Fisheries and Wildlife Science, University of Arizona, 1983

#### Current employment

Project Leader - Fisheries Research Biologist.

Confederated Tribes of the Umatilla Indian Reservation Oregon, Fisheries Program, La Grande, OR. January 1990 - present.

Primary responsibilities are to development, implementation and oversight of research and production projects in usual and accustomed hunting and fishing areas in the Grande Ronde and Imnaha river basins. Oversees 2 projects whose goals are to recovery endangered salmonid stocks and restore natural production and fisheries. Supervises two full-time Fish Biologists and 4-6 part-time technicians. Serves as a liaison between Pendleton CTUIR Fisheries Program personnel and state, federal and other non-CTUIR fishery programs and private landowners.

#### Past employment

Project Leader - Fisheries Research Biologist

Confederated Tribes of the Umatilla Indian Reservation Oregon, Fisheries Program, Pendleton, OR. October 1988 - January 1990.

Primary responsibilities were to development and implementation evaluations of acclimation facilities and oversees facility operations.

#### Fish Biologist

U.S. Fish and Wildlife Service, Cook, WA. August 1984 - October 1988.

Primary responsibilities were oversight of operations for laboratory diet analysis for piscine predators of salmonids in John Day Reservoir, Columbia River, collection of predators and written analysis of results.

#### Expertise:

Fisheries research project development and implementation, personnel management, budget development and tracking, technical report writing, natural production and supplementation research and statistical analysis.

#### Recent publications

- 1988. Hansel, H., S.D. Duke, P.T. Lofy and G.A. Gray. 1988. Use of diagnostic bones to identify and estimate the original lengths of prey fishes. *Transactions of the American Fisheries Society* 117: 55-62.
- 1994. A comparison of the performance of acclimated and direct stream released , hatchery-reared steelhead smolts in Northeast Oregon. (Whitesel, T.A., P.T. Lofy, R.W. Carmichael, R.T. Messmer, M.W. Flesher, and D.W. Rondorf) Pages 87-92 *in* High performance fish (D.D. MacKinlay, ed.); Fish Physiology Section, American Fisheries Society, Fish Physiology Association, Vancouver, British Columbia, Canada.
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#### **Unfilled position, Project Biologist, 1.0 FTE**

This position is expected to be filled in March 1998.

### **Section 10. Information/technology transfer**

This cooperative Program is expected to provide a wealth of information on specialty fields such as captive broodstock, supplementation evaluation, NATURES rearing, etc.

Information will be distributed through Quarterly and Annual reports, technical papers, presentations and posters. Distribution is expected to be offered to contracting agencies, permittees and comanagers through permit reporting requirements and Annual Operations Plans for Captive Brood and Lower Snake River Compensation Plan.

Extensive interagency information exchange is expected so that managers can make informed, sound adaptive management decisions as new data become available. In particular, evaluation of the success of increasing natural production is of prime importance in preventing extinction and planning for recovery.